

# INTERNATIONAL SEARCH REPORT

International Application No.  
PC 03/06913

**A. CLASSIFICATION OF SUBJECT MATTER**  
IPC 7 B21C47/14

According to International Patent Classification (IPC) or to both national classification and IPC

**B. FIELDS SEARCHED**

Minimum documentation searched (classification system followed by classification symbols)  
IPC 7 B21C

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)

EP0-Internal, PAJ

**C. DOCUMENTS CONSIDERED TO BE RELEVANT**

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	US 4 332 155 A (PARISEAU DAVID L) 1 June 1982 (1982-06-01) column 2, line 40 - column 3, line 8; figures	1
A	US 4 074 553 A (WOODROW HAROLD E) 21 February 1978 (1978-02-21) column 2, line 26 - column 3, line 27 column 3, line 48 - column 4, line 2; claim 1; figures	1
A	US 3 669 377 A (GILVAR MARTIN ET AL) 13 June 1972 (1972-06-13) column 2, line 4 - line 19; figures	1

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☒ Further documents are listed in the continuation of box C.

☒ Patent family members are listed in annex.

\* Special categories of cited documents:

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- \*X\* document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone
- \*Y\* document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art.
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Date of the actual completion of the international search

26 November 2003

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03/12/2003

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PL P 03/06913

## C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	US 4 242 892 A (WYKES ROBERT D ET AL) 6 January 1981 (1981-01-06) column 2, line 51 - column 3, line 6; figures	1
A	PATENT ABSTRACTS OF JAPAN vol. 013, no. 360 (M-858), 11 August 1989 (1989-08-11) -& JP 01 118330 A (AICHI STEEL WORKS LTD), 10 May 1989 (1989-05-10) abstract	1
A	PATENT ABSTRACTS OF JAPAN vol. 013, no. 118 (M-806), 23 March 1989 (1989-03-23) -& JP 63 295014 A (NIPPON STEEL CORP; OTHERS: 01), 1 December 1988 (1988-12-01) abstract	1

## INTERNATIONAL SEARCH REPORT

Information on patent family members

International Application No

EP 03/06913

Patent document cited in search report		Publication date	Patent family member(s)	Publication date
US 4332155	A	01-06-1982	BR 8108229 A CA 1147175 A1 EP 0055072 A2 JP 57127522 A	05-10-1982 31-05-1983 30-06-1982 07-08-1982
US 4074553	A	21-02-1978	CA 1062053 A1 DE 2750888 A1 FR 2375923 A1 IT 1090832 B JP 53085750 A SE 7712664 A	11-09-1979 06-07-1978 28-07-1978 26-06-1985 28-07-1978 04-07-1978
US 3669377	A	13-06-1972	DE 2158722 A1 GB 1364101 A JP 50014990 B	24-08-1972 21-08-1974 31-05-1975
US 4242892	A	06-01-1981	NONE	
JP 01118330	A	10-05-1989	NONE	
JP 63295014	A	01-12-1988	JP 1679664 C JP 3042966 B	13-07-1992 28-06-1991